

Appl. No. 09/745,458

BJA272C

Amdt. dated October 30, 2003

Reply to Office action of October 2, 2003

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1.(currently amended) A complex for delivery and application of drugs to cell membranes or a defined distance from the membrane within cells comprising:

at least one parachute structure, having a preselected defined action diameter which hinders said structure from penetrating through a cell membrane; and

at least one therapeutic compound, which can penetrate said cell membrane..

2.(currently amended) A complex according to claim 1, wherein said parachute structure comprises hydrophilic moieties, and said hydrophilic moieties are preferably sugar residues that have said defined action diameter, and wherein said action diameter can be achieved by is defined by the structure of a branching unit to which said hydrophilic moieties are bound and the length and structure of said hydrophilic moities.

3.(original) A complex according to claim 2, wherein said hydrophilic moieties are glucosamine molecules attaching to said branching unit.

4.(original) A complex according to claim 2, wherein said hydrophilic moieties may be monomers or oligomers with specific attachment points to selectins on specific cells so that the complex is targeted to said specific cells.

5.(original) A complex according to claim 1, wherein said parachute structure comprises a hydrophilic moiety and said hydrophilic moiety is a cyclodextrin.

6.(original) A complex according to claim 1, wherein said therapeutic compound is a photosensitizer.

7.(original) A complex according to claim 1, wherein said compound is a chemotherapeutic drug.

8.(original) A complex according to claim 1, wherein said parachute structure is directly bound to said therapeutic compound.

9.(original) A complex according to claim 1, wherein said parachute structure is connected with said therapeutic compound by a spacer, and wherein said spacer is preferably  $\beta$ -aminoacids,

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$\gamma$ -amino butyric acid, or poly-aminoacids, and wherein type and number of said spacer used define the distance of said therapeutic agent to cell membranes or its localization within the cell.

10.(original) A complex according to claim 9, wherein said spacer is preferably an aliphatic, aromatic or heterocyclic molecule, or an amino acid sequence.

11.(original) A complex according to claim 10, wherein said amino sequence has an enzyme cleavable breaking point.

12.(original) A complex according to claim 9, wherein using different number or type of said spacers to connect said therapeutic compound and said parachute structure delivers said complex into subcellular compartments at a defined distance from surface of said compartments.

13.(original) A complex according to claim 1, wherein said parachute structures are modified with signals for targeting said complex to a defined tissue or cell type in an organism.

14.(original) A complex according to claim 12, wherein said modified signals contain bridging structures like a biotin-avidin system.

15.(original) A complex according to claim 1, wherein said complex can be used for destruction of cells, and wherein said cells are prokaryotic, preferably bacteria.

16.(original) A complex according to claim 15, wherein said cells are eukaryotic, preferably human and animal cells.

17.(original) A complex according to claim 6, wherein said photosensitizer is close to said membrane during time of activation to render said photosensitizer more effective compared to a similar photosensitizer without said parachute structure.

18.(original) A method for the selective destruction of eukaryotic or prokaryotic cells comprising the steps of:

a. administering a complex, wherein said complex contains at least one parachute structure and at least one photosensitizer; and

b. waiting for a interval to allow said complex to selectively localize at cell membranes or at a defined position within a cell; and

c. irradiating a region where said complex was administered for a defined time interval and intensity to activate said photosensitizer, wherein said time interval and intensity are sufficient to achieve selective destruction of desired cells.